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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,048	10/16/2001	Li Wu	78036 20-3 US	6795

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EXAMINER	
TRAN, DZUNG D	
ART UNIT	**PAPER NUMBER**
2633	

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/981,048	WU ET AL.	
	Examiner	Art Unit	
	Dzung D Tran	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *5-11* is/are allowed.

6)☒ Claim(s) *1-4,12-16 and 18-20* is/are rejected.

7)☒ Claim(s) *17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/24/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Hendrix US patent no. 6,008,920.

Regarding claim 12, Hendrix discloses in figure 8, an optical demultiplexer device comprising: a housing 220 for supporting a plurality of ports at the periphery, and defining a free space therein;

an input port 226 through which a wavelength division multiplexed (WDM) signal comprising a plurality of wavelength channels is input into the free space;

a wavelength selective optical filter 230 sequentially disposed in the path of said WDM signal, each filter for transmitting at least one predetermined channel (channel 1, channel 2, to channel 4) of the WDM signal, and for reflecting the remainder of the WDM signal at an angle of reflection ($\theta 1$, $\theta 2$, $\theta 3$) to be incident upon the next optical filter;

a plurality of drop ports (245, 246, 247, 248), one drop port corresponding to each optical filter 230, for outputting the predetermined channels (channel 1, channel 2, to channel 4) transmitted by the corresponding optical filter; and

a plurality of prisms 260, 270 for redirecting the WDM signal traveling between the plurality of optical filters, whereby the position of each drop port is dependent upon the prisms 260, 270 and independent of the angles ($\theta 1$, $\theta 2$, $\theta 3$) of reflection. Hendrix does not discloses a plurality of optical filters, however, the wavelength selective optical filter 230 of Hendrix is filtering out the predetermined wavelengths per each drop ports, therefore, it is inherently that the wavelength selective optical filter 230 of Hendrix perform the same function as the plurality of optical filters.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. US patent no. 6,078,710 in view of Zhang US patent no. 6,567,578.

Regarding claim 1, Li discloses in figure 4, an optical system comprising:

a first Input port 302 through which a wavelength division multiplexed (WDM) signal comprising a plurality of wavelength channels (col. 5, lines 9-11) is input along a first path (path from 302 thru 310, 320, 330 to 340) in free space;

a first optical filter 340 disposed in the first path for transmitting at least a first predetermined wavelength channel of the WDM signal along the first path (a predetermined wavelength channel that out put at port 306) (col. 5, lines 19-23), and for reflecting other wavelength channels of the WDM signal at a reflection angle between the first path and a second path in free space (col. 5, lines 24-28); a first add/drop port 306 for outputting or inputting the first predetermined wavelength channel;

a second input/output port 304 adjacent to the first input/output port 302 for outputting or inputting the other wavelength channels of the WDM signal traveling along a third path (a path from 340 thru 330, 320, 310 to 304) in free space; and

a first wedge (same as prism) 330 for redirecting the other wavelength channels of the WDM signal traveling between the second path and the third path, whereby the position of the second input/output port is independent of the reflection angle (see figure 4). Li differs from claim 1 of the present invention in that he does not specific discloses a prism for redirecting the optical signal in an optical system, and the required distance between the first add/drop port and the second input/output port is reduced. However, the wedge or the prism is well recognized in the art for redirecting the optical signal, therefore, if it is not inherently, it would have been obvious that one skill in the art that the wedge of Li could performed the same function as claimed prism of present invention that is redirecting the optical signal to any position that make the required distance between the first add/drop port and the second input/output port is reduced.

Furthermore, Zhang discloses in figure 10, a reflective prism 917 for redirect the reflective optical signal 918 to port 904b, it would have been obvious for an artisan to include the prism of Wu in the system of Li. One of ordinary skill in the art would have been motivated to do this so that the overall package size for the device may be reduce (col. 9, lines 5-7).

Regarding claims 2, Zhang discloses a prism 922 of figure 9 having a reflective surface 924.

Regarding claims 3, Zhang discloses a prism 914 of figure 9 having two reflective surfaces 915 and 917.

Regarding claim 4, Zhang discloses in figure 10 the second path (916) is substantially parallel to the third path (918) and Li further in figure 4 the second path (path from 340 to 330) is substantially parallel to the third path (path from 330 to 310).

5. Claims 13-16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hendrix US patent no. 6,008,920 in view of Zhang US patent no. 6,567,578.

Regarding claim 13, Hendrix discloses all the limitations except for prism has one reflective surface for redirecting the reflected WDM signals. Zhang discloses a prism 922 of figure 9 having a reflective surface 924. It would have been obvious for an artisan to include the prism of Zhang in the system of Hendrix. One of ordinary skill in the art would have been motivated to do this so

that the overall package size for the device may be reduce (col. 9, lines 5-7 of Zhang).

Regarding claim 14, whether or not to filtering the predetermined channel for outputting to the output port or transmit all un-filtered channels to the output port is obviously an engineer design choice.

Regarding claim 15, Zhang discloses a prism 914 of figure 9 having two reflective surfaces 915 and 917.

Regarding claim 16, Zhang discloses in figure 10 the second path (916) is substantially parallel to the third path (918) and Li further in figure 4 the second path (path from 340 to 330) is substantially parallel to the third path (path from 330 to 310).

Regarding claim 18, Hendrix discloses the WDM signal enters each prism along a reflected path and exits each prism along an incident path, which is not parallel to the reflected path (see figure 8).

Regarding claim 19, Hendrix disclose all of the drop ports 245, 246, 247, 248 are mounted on one side of the housing in a linear array (see figure 8).

Regarding claim 20, Hendrix disclose the device is a multiplexing/demultiplexing device (see abstract).

6. Claims 5-11 are allowed.

7. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Duck et al. U.S. patent no. 5,808,763. Optical demultiplexor

b. Palmer U.S. patent no. 4,343,532. Dual directional wavelength demultiplexer

c. Wu U.S. patent no. 5,724,165. Fault tolerant optical routing switch

d. Nosu et al. U.S. patent no. 4,244,045. Optical multiplexer and demultiplexer

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. R. Sedighian

M. R. SEDIGHIAN
PRIMARY EXAMINER

DT
09/28/2004